The Children's Healthline
communicating today's environmental problems to protect our children's future

Summer Ozone - a Health Risk to Children

Ozone - Why be concerned?

Pound for pound children breathe more air than adults. As a result, they inhale more ozone and other air pollution per pound of body weight making them more vulnerable to air pollution. Added to this are the facts that children are very active in outdoor activities and their bodies (and lungs) are still developing. When children breathe air containing high levels of ozone, it damages the cells that line their respiratory tracts; this results in:

Numerous respiratory effects, such as shortness of breath, coughing, chest tightness and pain, and aggravated upper respiratory tract infection;

Impaired immune systems, making children more susceptible to diseases, illnesses;

Aggravated asthma attacks in children already afflicted with the disease; and

Permanent lung injury/reduced lung function from chronic exposure, as well as, temporary decreases in lung function of 15-20% during high ozone episodes.

The American Lung Association estimated that 27 million children under the age of 13 reside in areas with ozone levels above the EPA standard. Furthermore, half the pediatric asthma population - two million children - live in these areas.

The American Public Health Association estimates that high ozone levels cause approximately 50,000 emergency room visits each year and result in 15,000 hospitalizations for respiratory-related illnesses.

Ozone - What is it?

- Ozone is an odorless and colorless gas and a prime ingredient of smog.

  Ozone is produced when air pollutants from a variety of sources (e.g., emissions from cars, trucks, buses, lawnmowers, boats, power plants, industrial facilities, and small businesses such as printers, dry cleaners and paint shops) react in sunlight.

  Ozone occurs naturally in the upper atmosphere (stratosphere) where it provides a protective layer high above the earth; at ground level it is a health hazard, especially to children.

  Ground-level ozone levels are generally highest on hot, calm, sunny days, particularly in the afternoon when children are most often outside playing.

- When you hear reports of the ozone level or an ozone alert, they're referring to a measurement of the ground-level ozone. When you hear reports on the shrinking of the ozone layer or holes in the ozone layer, they're referring to the protective stratospheric ozone. A simple way to remember the difference in ozone layers is - "good up high, bad nearby".

What should a parent or guardian do?

To immediately protect your children:

Regularly check ozone levels (found in television, radio and newspaper weather reports) and, if high, take the following precautions:

Limit children's outdoor activities, especially active ones. Where possible, keep children in air conditioned spaces.

Ozone Action Days - In urban areas with high ozone levels, such as Philadelphia, ozone readings are taken continuously and matched to health standards. When standards are exceeded, alerts are issued by the media and precautions urged. Code Red means ozone exceeds safe levels.

Be aware of sensitivities that put your children at risk, such as asthma and chronic lung diseases, and seek medical advice, treatment. See that your children have quick access to medication in any emergencies. ***Alert sports coaches, summer camp counselors, child-care professionals to the increased risk and urge them to take precautions.*** Also, see that your child's school takes precautions during ozone alerts. It's always best for sensitive children to be in air conditioned areas during high ozone days.

Avoid areas with the worst air pollution such as busy roadways.

Keep indoor air as clean as possible to provide a safe haven for your children (keep free of cigarette smoke, keep dust and mildew to minimum through regular cleaning, replace A/C filters, don't use unvented gas appliances, and reduce sources of fumes (pesticides, wood fires, cleaners, solvents, deodorizing sprays, dry cleaned clothes, paints) through reduced use, cleaner alternatives, or adequate ventilation when in use. EPA does not recommend the use of ozone generators sold as indoor air cleaners.

Indoor ozone levels can be two to three times lower than outside if windows and doors are closed; with air conditioning, ozone levels approach zero.

Other Measures:

Reduce your contributions to the problem. Immediate actions that should be taken include avoiding or reducing use of autos, boats and gas-powered lawn equipment. This is especially important during the morning and mid-day hours. Also, keep your car properly tuned, avoid unnecessary idling, and don't top off your gas tank.

Longer term changes should revolve around using less energy. Examples include purchasing more fuel-efficient vehicles, using hand tools instead of power tools, and buying alternative products which emit fewer pollutants, such as water-based paints instead of oil paints.

Help get polluters off the road. Some states have established special telephone numbers where citizens can report idling vehicles with visible emissions.

Consult the Toxic Release Inventory (TRI) and lobby local sources of ozone pollution to reduce emissions.

For Additional Information:

EPA: *www.epa.gov/airnow* to see live reports on ozone levels in your area and forecast reports for the next day.
National Safety Council: *www.nsc.org/ehc/mobile/ozone.htm*

Update - the Safety of Vinyl Toys

In December we reported on concerns regarding chemicals called phthalates used in vinyl toys to make them soft and pliable. Since then the findings of a study funded by the non-profit American Council of Science and Health and led by former Surgeon General C. Everett Koop have been released. In Koop's words, ***"Consumers can be confident that vinyl toys and medical devices are safe. There is no scientific evidence that they are harmful to children or adults."*** *Another study, by the Food and Drug Administration, is still ongoing.*

For more information on EPA Region III's Children's Environmental Health Program, contact Gail Tindal at (215) 814-2069 or Dan Welker at (215) 814-2744.